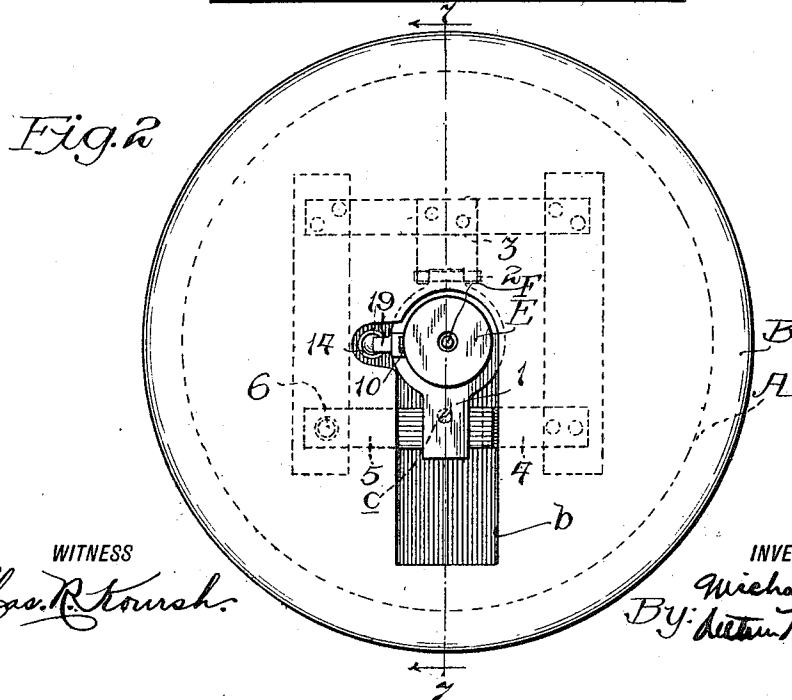
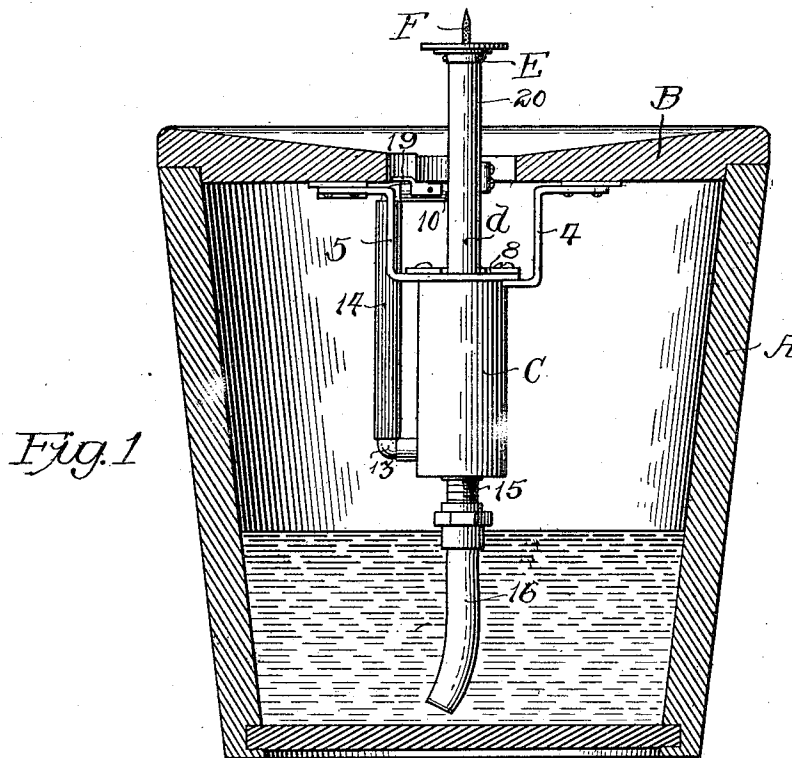


M. F. SERVATIUS.
MEAT CURING MACHINE.
APPLICATION FILED APR. 2, 1917.

1,271,490.

Patented July 2, 1918.
2 SHEETS—SHEET 1.



WITNESS
Chas. R. Koush.

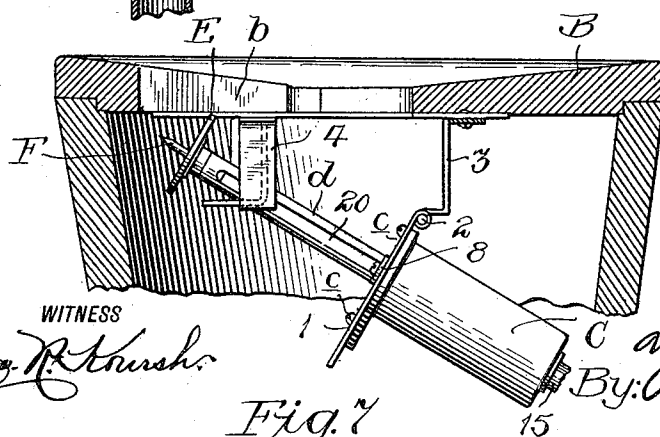
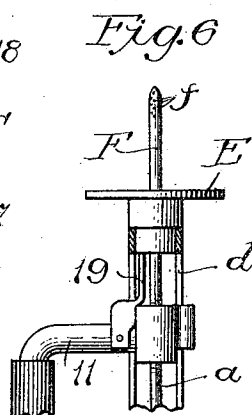
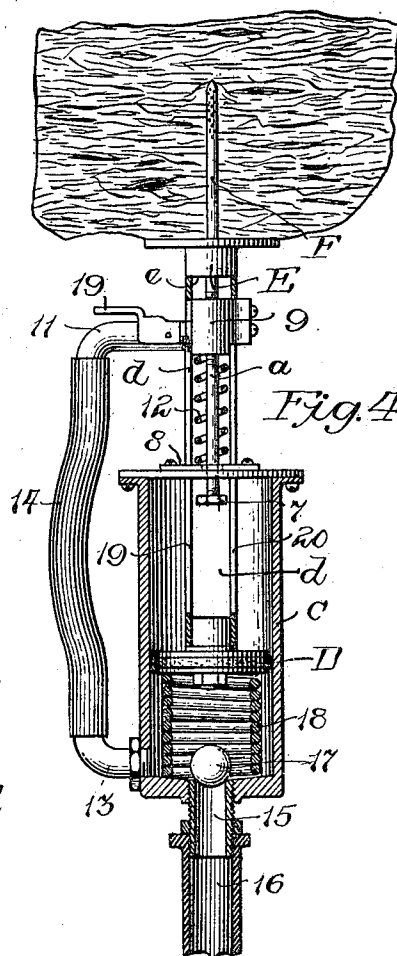
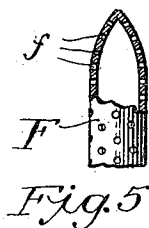
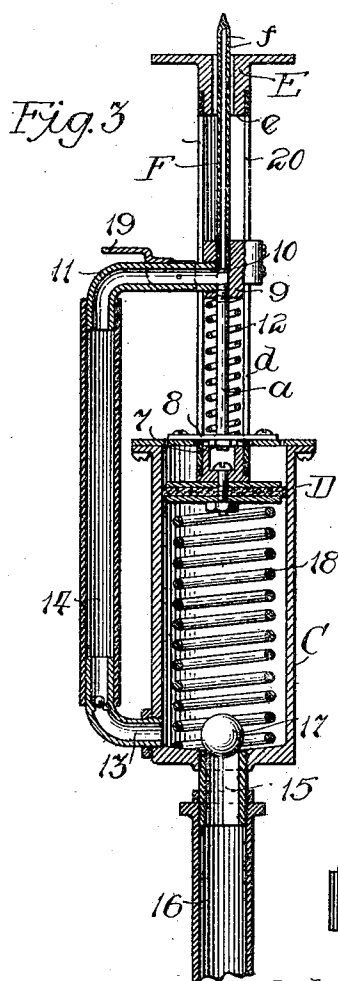
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By: *Arthur H. Leonard*

ATTORNEY

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WITNESS
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Fig. 7

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UNITED STATES PATENT OFFICE.

MICHAEL F. SERVATIUS, OF CHICAGO, ILLINOIS.

MEAT-CURING MACHINE.

1,271,490.

Specification of Letters Patent.

Patented July 2, 1918.

Application filed April 2, 1917. Serial No. 159,093.

To all whom it may concern:

Be it known that I, MICHAEL F. SERVATIUS, a citizen of the United States of America, and resident of Chicago, Cook county, Illinois, have invented a certain new and useful Improvement in Meat-Curing Machines, of which the following is a specification.

My invention relates to meat-curing machines of that kind in which means are provided for injecting brine or other liquid into the meat, as in making corned beef or other similar products, and is in the nature of an improvement on the device covered by my prior Patent No. 1,126,579, granted January 26, 1915.

An object of my invention, as herein disclosed, is to simplify and reduce the cost of manufacture of a machine of this character.

Another object is to provide an improved construction and arrangement which will tend to render the machine more certain of operation and less liable to get out of order.

It is also an object to provide certain details and features of construction and combinations tending to increase the general efficiency and desirability of a meat-curing machine of this particular character.

To the foregoing and other useful ends, my invention consists in matters hereinafter set forth and claimed.

In the accompanying drawings:—

Figure 1 is a vertical section of a pail or receptacle for holding the brine, showing a meat-curing machine in side elevation therein, embodying the principles of my invention.

Fig. 2 is a plan of the structure shown in Fig. 1.

Fig. 3 is an enlarged vertical section of the mechanism of said machine, showing the pump-plunger in elevated position.

Fig. 4 is a similar view showing the plunger in depressed position.

Fig. 5 is an enlarged detail sectional view of the upper end of the needle or piercing member by which the brine is injected into the meat.

Fig. 6 is a detail view showing a portion of the mechanism adjusted to limit the downward movement of the plunger.

Fig. 7 is a section on line 7—7 in Fig. 2, with the lower portion of the pail or recep-

tacle broken away for convenience of illustration, and showing the pump-mechanism tilted downward to the position which it occupies when the machine is not in use.

As thus illustrated, my invention comprises a receptacle A of any suitable character, having a top B of suitable shape and construction. The pump-cylinder C is removably secured by screws *c* to the top plate 1, which plate has one edge thereof hinge-connected at 2 with the depending bracket 3, which latter has its upper end suitably secured to the cover B of the receptacle. The bracket 4 is rigidly secured to the under side of said cover, but the bracket 5 is pivotally connected at 6 with the under side of the cover, so that this bracket 5 is movable about said pivot in a horizontal plane. When the bracket 5 rests upon the lower end of the bracket 4 (see Fig. 1), a support is provided for the other end of the plate 1, so that the pump is supported in upright position. However, when the bracket 5 is swung about its pivot 6, so as to disengage the adjacent edge of the plate 1, the pump is then movable about its hinge 2 into the position shown in Fig. 7, so that the entire mechanism is depressed below the cover to prevent injury thereto when the machine is not in use. The cover B has an opening *b* through which the upper portion of the pump-mechanism is movable.

Said pump has a plunger D therein, and this plunger has a vertically disposed tube *d* rigidly secured thereto, and the upper end of said tube has a flat head or meat-rest E removably secured thereto. The needle or piercing member F is a hollow tube, of smaller diameter than the tube *d*, and arranged inside of the latter. The upper end of this member F is provided with outlets *f* for the brine or other liquid to be injected into the meat. The lower end of the rod *a* is provided with a head 7 which bears against the under side of the plate 8, the latter being secured upon the plate 1 in any suitable or desired manner. A shoulder 9 is suitably secured to the member F, and the latter has a lateral opening 10 which communicates through this shoulder with the tube 11 which extends horizontally a distance therefrom. The lower end of the tube F is screwed into the shoulder 9, and the upper end of the rod *a* is screwed into this

same shoulder. A compression-spring 12 is interposed between the top of the plate 8 and the bottom of the shoulder 9, so that the downward movement of the member F is yieldingly resisted by this spring. The lower end of the pump-cylinder C is provided with an outlet-tube 13, and this tube is connected with the tube 11 by means of a flexible tube 14 of rubber or other suitable material. The lower end of the pump-cylinder has an inlet 15 provided with a depending rubber tube 16 which extends downward into the brine or other liquid in the receptacle. A ball 17, or other movable valve-member, controls the upper end of the inlet 15, allowing the liquid to enter the pump-cylinder, but serving as a check-valve to prevent the liquid from discharging through the same passage through which it entered. A spring 18 is interposed between the bottom of the plunger D and the lower end of the pump-cylinder, so that the downward movement of the plunger and its stem *d*, and the head E at the upper end thereof, is yieldingly resisted, whereby the plunger is automatically restored to its normal or raised position after being depressed and released. The plunger can be depressed until the lower end *e* of the head bears against the top of the shoulder 9, with the mechanism as shown in Figs. 3 and 4. The tube or stem *d* is, it will be seen, provided with vertical slots 19 and 20 at the opposite sides thereof, so that it can slide downward without moving the shoulder 9 and the tube 11, thus permitting said shoulder 9 to remain in the position shown in Fig. 3, when the plunger is forced downward. A pivoted stop 19 is, however, mounted on the tube 11 in such position that it can be raised to engage with its free end the lower end *e* of the head E (see Fig. 6), thus limiting the downward movement of the plunger, relative to the shoulder 9, when such is necessary or desirable. When the plunger is forced downward (see Fig. 4), the spring 18 is compressed, and when the head E strikes the shoulder 9, any further movement will then compress the spring 12, in the manner shown, the tube 14 flexing slightly to permit this mode of operation. If, however, it is desired to limit the extent of penetration of the member F in the meat, the stop 19 is then swung upward (see Fig. 6.), and when the head E strikes the upper end of this stop, the relative movement between the head E and the piercing member F will cease, and any further downward pressure on the head E will then simply move the plunger and the member F downward in unison.

In operation, the section of meat is brought downward upon the top of the head E, and downward pressure will then cause the plunger to move downward in the pump, but the spring 12 is strong enough to main-

tain the member F in its raised position, causing this member to penetrate the meat. The downward movement of the plunger will force the brine or other liquid out of the pump-cylinder and through the pipes and tubes 11, 13 and 14 into the member F, so that this liquid will finally be discharged through the orifices *f* into the meat. During this operation, should the point of the member F strike a bone, this member would then be depressed, the spring 12 yielding to prevent breakage or injury to the mechanism. When the pressure is relaxed, the spring 18 then drives the plunger D upward, causing the brine or liquid in the receptacle to be drawn upward through the rubber tube 16 and into the cylinder of the pump. Then when the pressure is again exerted downward, the liquid in the pump is driven out by the downward stroke of the plunger, and forced upward through the piercing member F and into the meat.

When the liquid is forced out of the pump-cylinder, through the tube 13, it is prevented from returning to the cylinder (by the ball check-valve or other device shown in the tube), so that when the plunger moves upward the liquid in the flexible tube 14 is not drawn back into the cylinder. It will be understood, however, that this check-valve, and the one which controls the inlet of the cylinder, can be of any suitable form or character.

What I claim as my invention is:—

1. In a meat-curing machine, a hollow piercing member having outlet means in the end-portion thereof, a pump connected to supply the curing liquid to said member, said pump having a plunger, and a meat-rest associated with said member and rigidly connected to said plunger.

2. A structure as specified, in claim 1, in which said pump has a tubular plunger-rod which forms a guide, and in which said member has an inlet-connection which slides in said guide.

3. A structure as specified in claim 1, in which said pump is provided with a tubular plunger-rod which incloses said member.

4. A structure as specified in claim 1, in which said member has an inlet-connection provided with an adjustable stop to limit the relative downward movement between said plunger and said member.

5. A structure as specified in claim 1, in which said pump and member and meat-rest are supported for tilting motion to occupy a lower position when the machine is not in use.

6. A structure as specified in claim 1, in which said member is provided with a shoulder forming an inlet therefor, a stationary support in which the lower portion of said member is movable up and down, and a compression-spring interposed between said

shoulder and support to yieldingly resist downward movement of said member, so that said member will be moved downward when the upper end thereof strikes a bone or other obstruction in the meat.

5 7. In a meat-curing machine, the combination of (1) a pump having a plunger, (2) a hollow piercing member, (3) means on said plunger to form a guide for said member,
10 (4) means whereby said plunger and said member are given relative movement to cause said member to enter the meats, and

(5) means to supply liquid to said member from said pump.

8. A structure as specified in claim 7, in which a spring is provided for moving said member upward, and in which a spring is provided for moving said plunger upward. 15

9. A structure as specified in claim 7, in which said pump has stationary means to limit the upward movement of said member. 20

Signed by me at Chicago, Illinois, this 27th day of March, 1917.

MICHAEL F. SERVATIUS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."